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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,621	12/10/2001	Hideyuki Takaoka	P 290437 OL98801N-US	1161

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EXAMINER

TURNER, SAMUEL A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

FF

Office Action Summary

Application No.

10/006,621

Applicant(s)

TAKAOKA, HIDEYUKI

Examiner

Samuel A. Turner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the **invention** to which the claims are directed.

Drawings

The drawings are objected to because figure 11 must be labeled as prior art. Correction is required.

Rejections Under 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Claims 9-13, 17, 19, and 20, contain functional "wherein" clauses which do not further limit the invention, and it has been held that the recitation that an element is "capable of" performing a function, claims 6, 7, 16, and 17, is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any

patentable sense. *In re Hutchison*, 69 USPQ 138. This functional language is confusing in that said function language obscures the actual subject matter claimed.

Claim 7/6 conflicts with claim 6 in that claim 6 is limited to $Lc \geq Df$ where 7/6 describes $Lc < Df$.

Claims 9, 10, 12, and 13 contain an improper alternative; when $Lc < Df$, $v1 > v2$; when $Lc \geq Df$, $v2 > v1$. This is an improper alternative as claim 6 limits the $Lc \geq Df$ and claim 7 limits the $Lc < Df$. The alternative are thus confusing.

Claim 10 conflicts with claim 6 in that claim 6 is limited to $Lc \geq Df$ where 10 describes $Lc < Df$.

Rejections Under 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

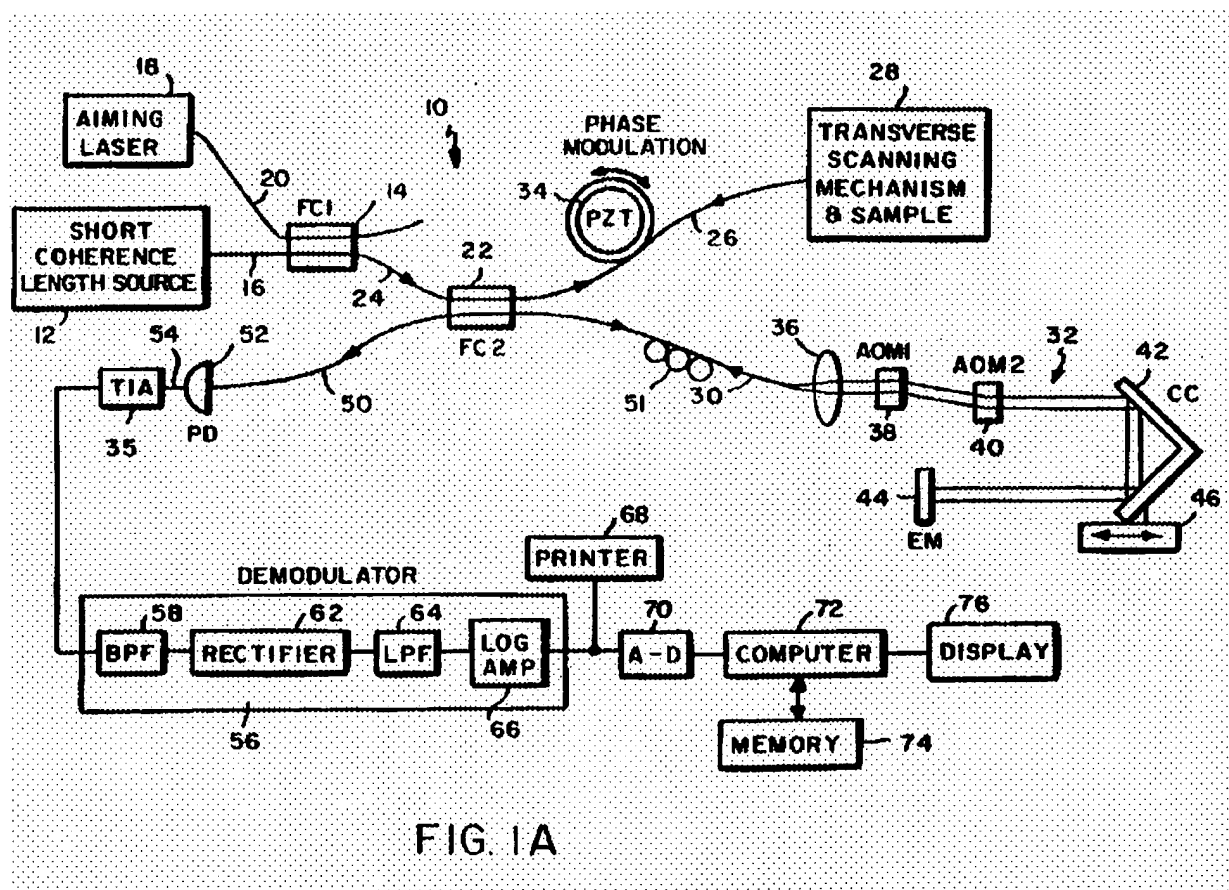
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

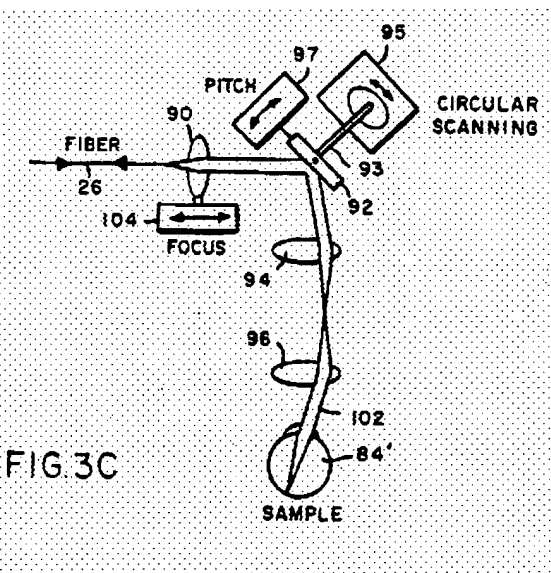
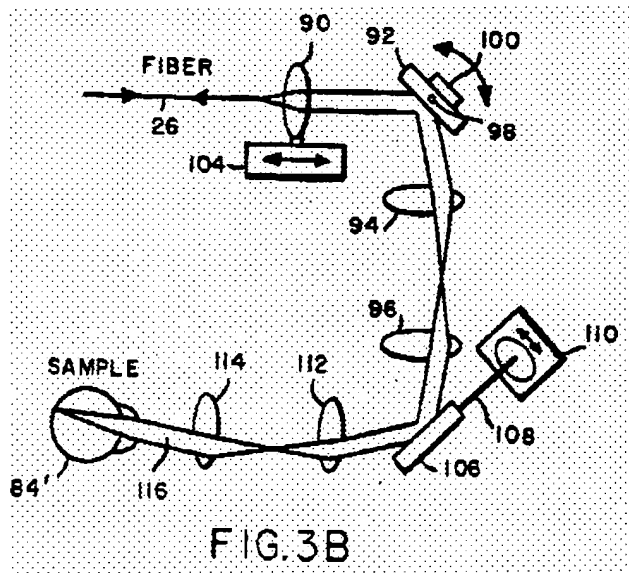
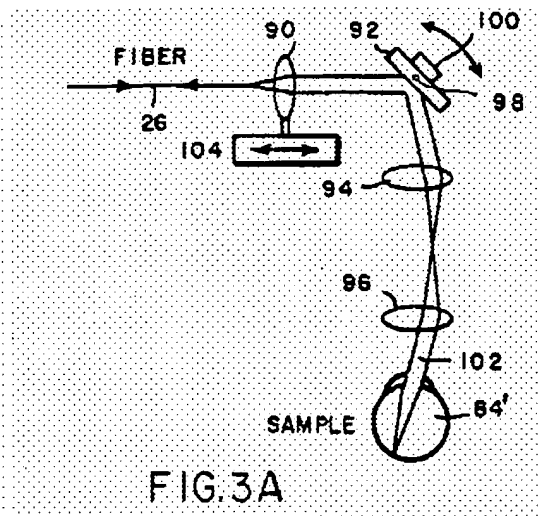
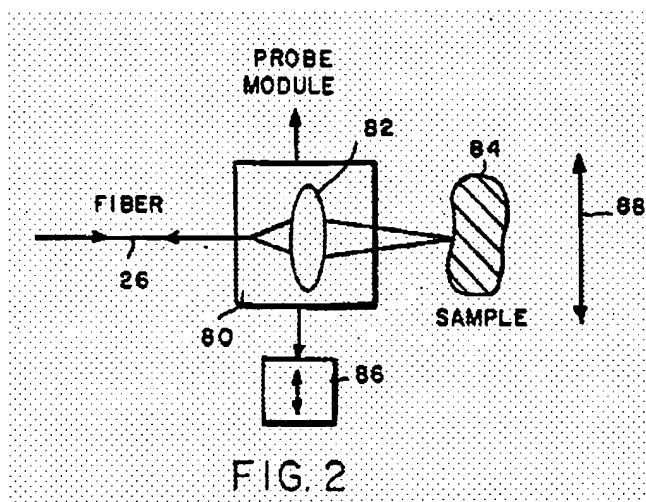
Claims 1, 2, and 5 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Swanson et al(5,321,501).

Swanson teaches a coherence domain reflectometer comprising a short coherence light source(12); fiber coupler(22); a reference arm which includes AOM's(36,40), a path length scanner(42,46), and reference mirror(44); a measurement arm which includes a PZT phase modulator(34), and scan

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mechanism(28); and photodetector(52). See figure 1A. Fiber/lens combinations change the diameter of the measurement beam. Also taught are multiple scanning arrangements including 1-3 dimensional scanning. See figures 2-3c. Figures 3a-4b also include pupil relays.





Rejections Under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

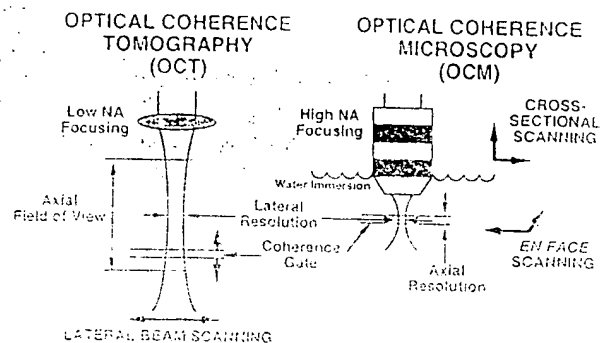
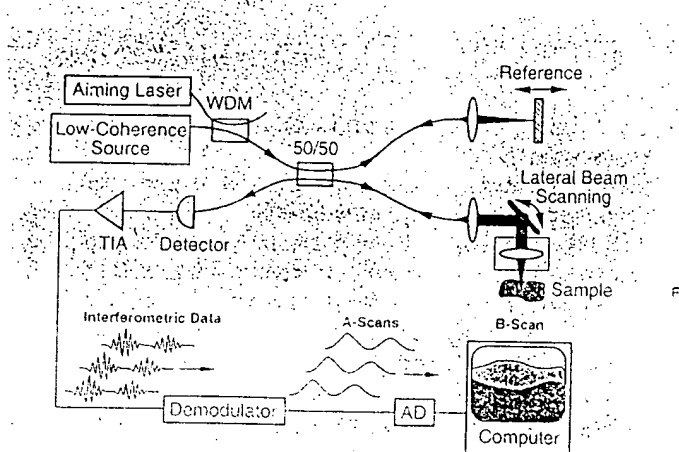
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subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Swanson et al(5,321,501).

While Swanson does not include a correcting mechanism it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the scanning mechanisms in the beam path to maximize the scan area. Position of the various optics would have been set at manufacture.

Claims 6-15, 17, and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Swanson et al(5,321,501) as applied to claims 3 and 4 above, and further in view of Izatt et al(Optics Letters).



Izatt et al teach that a low NA focusing objective can be used for OCT applications while a high NA focusing objective is used for OCM applications in a coherence domain reflectometer. See figures 1a and 1b.

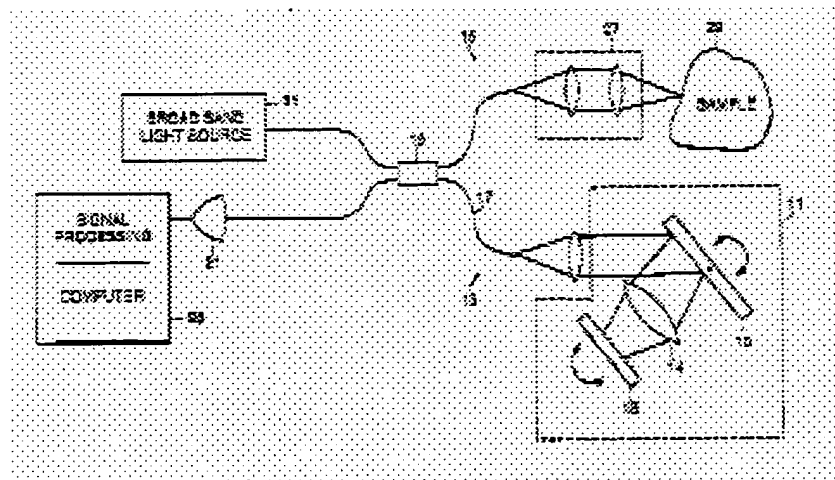
It would have been obvious to one of ordinary skill in the art at the time the invention was made to use either a low NA or high NA focusing objective dependent on the application needed OCT or OCM.

With regard to claims 9-13, and 15; it would have been obvious to one of ordinary skill in the art to set the scan speeds of the scan mechanisms relative to the type of application, OCT or OCM, and the object under test.

Note that nowhere in the claims is changing between an OCT and an OCM objective positively claimed. As only a generic light source claimed, the claims are not restricted to a coherence domain reflectometer.

Claims 16, 18, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Swanson et al(5,321,501) and Izatt et al(Optics Letters) as applied to claims 3, 4, 6-15, 17, and 19 above, and further in view of Tearney et al(6,111,645).

Tearney et al teach the use of a dispersion compensator(11) in the reference path of a coherence domain reflectometer.



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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the coherence domain reflectometer of Swanson by including a dispersion compensator in the reference path in order to compensate for the dispersion mismatches.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose telephone number is **(703) 308-4803**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font, can be reached on (703) 308-4881.

The fax phone number for this Group is (703) 308-7722. The faxing of papers related to this application must conform with the notice published in the Official Gazette, 1096 O.G. 30 (15 November 1989). The Group receptionist telephone number is (703) 308-0956.

Any inquiry of a technical nature regarding reissues, petitions, and terminal disclaimers should be directed to Hien Phan whose telephone number is (703) 308-7502, or Ed Westin whose telephone number is (703) 308-4823.

Any other inquiry of a technical nature, and all inquiries of a general nature including those relating to the status of this application or any patent term adjustment should be directed to TC2800 Customer Service Office whose telephone number is (703) 306-3329.



Samuel A. Turner
Primary Examiner
Art Unit 2877

SAT
8/25/03